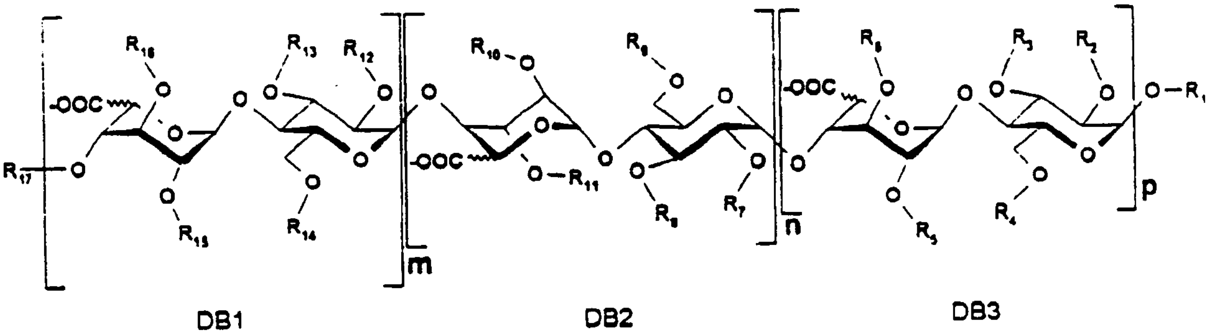
Claim Amendments:

Claim 1. (Currently amended): ~~Synthetic~~ A synthetic polysaccharide containing from 8 to 24 monosaccharide units ~~formed by~~ comprising a sequence of disaccharides formed from a uronic acid and from a hexose, ~~the~~ said polysaccharide ~~being characterized in that all~~ having its hydroxyl groups ~~are~~ etherified with a $(C_1$-$C_6)$alkyl group or esterified in the form of a sulpho group, each disaccharide being at least monoetherified; ~~as well as its~~ and salts thereof.

Claim 2. (Currently amended): ~~Salt~~ A polysaccharide of Claim 1 ~~formed from an anion and a cation, the anion~~ having the formula:



(I)

in which

- the wavy line indicates either a bond below or above the plane of the pyranose ring;
- R_1, R_6, R_{11} and R_{16} are a $(C_1$-$C_6)$alkyl;
- R_2, R_3, R_4, R_5, R_7, R_8, R_9, R_{10}, R_{12}, R_{13}, R_{14}, R_{15} and R_{17} are a $(C_1$-$C_6)$alkyl or an SO_3^- group;
- m, n and p are such that the sum m + n + p is greater than or equal to 4 and less than or equal to 12, one or two of the three being able to be zero;

~~the cation being a pharmaceutically acceptable monovalent cation,~~

~~as well as the~~ and the salts thereof and the acids corresponding ~~acid~~ thereto.

Claim 3. (Currently amended): ~~Salt~~ A polysaccharide according to ~~Claim 2~~ Claim 10 in which the cation is selected from ~~the cations of alkali metals, in particular~~ sodium and potassium.

Claim 4. (Currently amended): ~~Salt according to one of Claims 2 or 3 in which~~ A polysaccharide of Claim 2 wherein the alkyls are methyls~~, as well as the corresponding acid~~ and the salts thereof and the acids corresponding thereto.

Claim 5. (Currently amended): ~~Salt according to one of Claims 2 or 3 in which~~ A polysaccharide of Claim 2 wherein n and p are equal to zero~~, as well as the corresponding acid~~ and the salts thereof and the acids corresponding thereto.

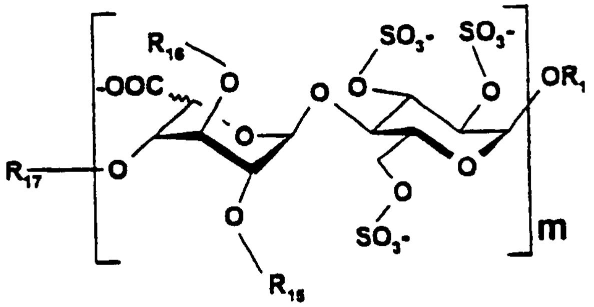
Claim 6. (Currently amended): ~~Salt according to one of Claims 2 or 3 in which~~ A polysaccharide of Claim 2 wherein n and p are equal to zero and m is 4 to 10~~, as well as the corresponding acid~~ and the salts thereof and the acids corresponding thereto.

Claim 7. (Currently amended): ~~Salt according to one of Claims 2 or 3 in which~~ A polysaccharide of Claim 2 wherein n and p are equal to zero, m is 4 to 10; at least one of the substituents R_{12}, R_{13}, R_{14} and R_{15} is a sulphate group; ~~R_1, R_{16} and R_{17} being as defined for (I), as well as the corresponding acid~~ R_1 and R_{16} are a $(C_1\text{-}C_6)$alkyl and R_{17} is a $(C_1\text{-}C_6)$alkyl or an SO_3^- group and the salts thereof and the acids corresponding thereto.

Claim 8. (Currently amended): ~~Salt according to one of Claims 2 or 3 in which~~ A polysaccharide of Claim 2 wherein n and p are equal to zero, m is 4 to 10; at least two of the substituents R_{12}, R_{13}, R_{14} and R_{15} are a sulphate group; ~~R_1, R_{16} and R_{17} being as defined for (I), as well as the corresponding acid~~ R_1 and R_{16} are a $(C_1\text{-}C_6)$alkyl and R_{17} is a $(C_1\text{-}C_6)$alkyl or an SO_3^- group and the salts thereof and the acids corresponding thereto.

Claim 9. (Currently amended): ~~Salt according to one of Claims 2 or 3, in which~~ A polysaccharide of Claim 2 wherein n and p are equal to zero, m is 4 to 10; at least three of the substituents R_{12}, R_{13}, R_{14} and R_{15} are a sulphate group; ~~R_1, R_{16} and R_{17} being as defined for (I), as well as the corresponding acid~~ R_1 and R_{16} are a $(C_1\text{-}C_6)$alkyl and R_{17} is a $(C_1\text{-}C_6)$alkyl or an SO_3^- group and the salts thereof and the acids corresponding thereto.

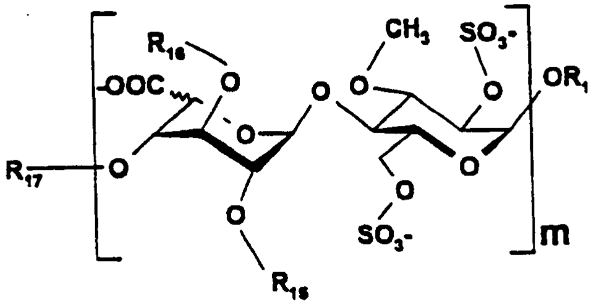
Claim 10. (Currently amended): ~~Salt~~ A polysaccharide according to Claim 2 ~~or 3 whose~~ formed from an anion and from a cation, wherein the anion has the formula (I.1):



(I.1)

in which m is 4 to 10; ~~R_1, R_{15}, R_{16} and R_{17} being as defined for (I)~~ R_1 and R_{16} are a (C_1-C_6)alkyl and R_{15} and R_{17} are a (C_1-C_6)alkyl or an SO_3^- group, each uronic acid being either an iduronic or glucuronic acid~~, as well as the corresponding acid~~ ; and the cation is a pharmaceutically acceptable monovalent cation; and the salts thereof and the acids corresponding thereto.

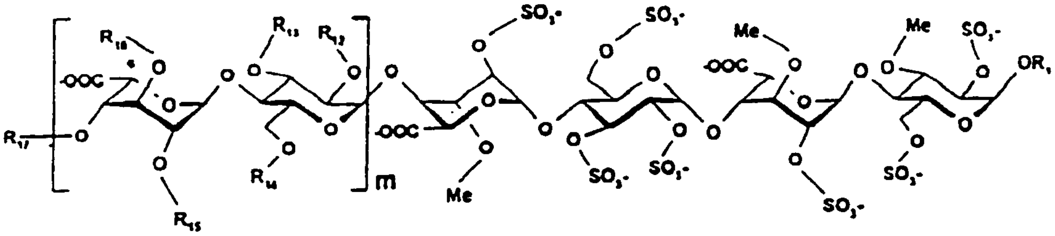
Claim 11. (Currently amended): ~~Salt~~ A polysaccharide according to Claim 2 ~~or 3 whose~~ formed from an anion and from a cation, wherein the anion has the formula (I.2):



(I.2)

in which m is 4 to 10; ~~R_1, R_{15}, R_{16} and R_{17} being as defined for (I)~~ R_1 and R_{16} are a (C_1-C_6)alkyl and R_{15} and R_{17} are a (C_1-C_6)alkyl or an SO_3^- group, each uronic acid being either an iduronic or glucuronic acid~~, as well as the corresponding acid~~ ; and the cation is a pharmaceutically acceptable monovalent cation; and the salts thereof and the acids corresponding thereto.

Claim 12. (Currently amended): ~~Salt~~ A polysaccharide according to Claim 2 ~~or 3 whose~~ formed from an anion and from a cation, wherein the anion has the formula (I.3):



(I.3)

in which m is 2 or 3; ~~R_1, R_{12}, R_{13}, R_{14}, R_{15}, R_{16} and R_{17} are such as defined for (I)~~ R_1 and R_{16} are a (C_1-C_6)alkyl and R_{12}, R_{13}, R_{14}, R_{15} and R_{17} are a (C_1-C_6)alkyl or an SO_3^- group, each uronic acid being either an iduronic or glucuronic acid~~, as well as the corresponding acid~~ ; and the cation is a pharmaceutically acceptable monovalent cation; as well as the salts thereof and the acids corresponding thereto.

Claim 13. (Currently amended): ~~Salt~~ A polysaccharide according to Claim 12 in which R_1 is a methyl, R_{13} in position 3 of the glucose is a methyl, R_{12} in position 2 and R_{14} in position 6 of the glucose are an SO_3^- and R_{16} in position 3 of the iduronic or glucuronic unit is a methyl, and m ~~being~~ is equal to 2 or 3.

Claim 14. (Currently amended): ~~Polysaccharide~~ A polysaccharide chosen from ~~amongst~~ the group consisting of:

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-α-L-idopyranosyluronic acid)]$_9$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-α-L-idopyranosyluronic acid)]$_4$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt, methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-α-L-idopyranosyluronic acid)]$_5$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-α-L-idopyranosyluronic acid)]$_6$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-α-L-idopyranosyluronic acid)]$_7$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-α-L-idopyranosyluronic acid)]$_8$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-β-D-glucopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-β-D-glucopyranosyluronic acid)]$_4$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(2,3-di-*O*-methyl-4-*O*-sulpho-β-D-glucopyranosyluronic acid)-[(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(2,3-di-*O*-methyl-β-D-glucopyranosyluronic acid)]$_3$-2,3,6-tri-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(3-*O*-methyl-2,4-di-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)]$_4$-3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranoside, sodium salt,

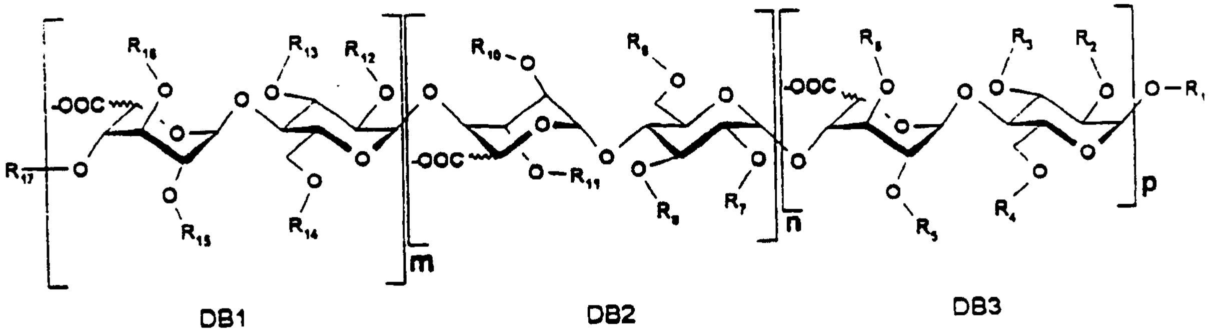
methyl (1-4)-*O*-(3-*O*-methyl-2,4-di-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)]$_3$-3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl *O*-(3-*O*-methyl-2,4-di-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)(1-4)-]$_5$-3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranoside, sodium salt, methyl (1-4)-*O*-(3-*O*-methyl-2,4-di-*O*-sulpho-β-D-glucopyranosyluronic acid)-[(1-4)-*O*-(3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-β-D-glucopyranosyluronic acid)]$_4$-3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranoside, sodium salt,

methyl (1-4)-*O*-(3-*O*-methyl-2,4-di-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)]$_2$-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-(1-4)-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)-3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranoside, sodium salt, and

methyl (1-4)-*O*-(3-*O*-methyl-2,4-di-*O*-sulpho-α-L-idopyranosyluronic acid)-[(1-4)-*O*-(3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)]$_3$-(1-4)-*O*-(2,3,6-tri-*O*-sulpho-α-D-glucopyranosyl)-(1-4)-*O*-(3-*O*-methyl-2-*O*-sulpho-α-L-idopyranosyluronic acid)-3-*O*-methyl-2,6-di-*O*-sulpho-α-D-glucopyranoside, sodium salt.

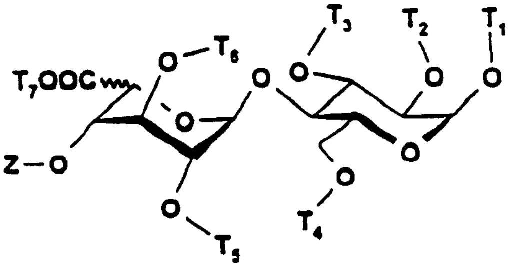
Claim 15. (Currently amended): ~~Process~~ A process for the preparation of ~~the~~ compounds of formula (I):



(I)

~~according to Claim 2, characterized in that~~ comprising the steps of:

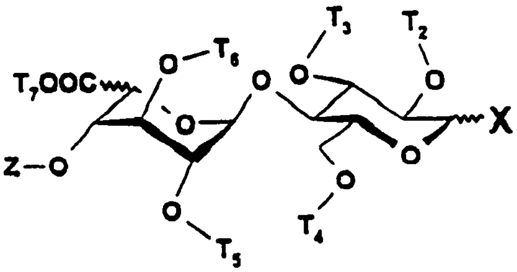
(a) coupling a glycosidic link donor monosaccharide ~~is coupled~~ to a glycosidic link acceptor monosaccharide according to the classical methods of sugar chemistry to obtain an intermediate saccharide synthon of completely protected disaccharide type of formula (A):



(A)

in which the identical or different T_1, T_2, T_3, T_4, T_5, T_6, T_7 and Z substituents are selected from the protective groups used in sugar chemistry as permanent, semi-permanent or temporary protective groups,

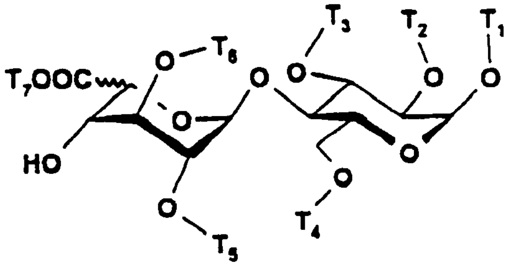
(b) chemically modifying the disaccharide of formula (A) above ~~is modified chemically so as~~ to obtain an intermediate saccharide synthon of glycosidic link donor disaccharide type of formula (B):



(B)

in which T_2 to T_7 and Z are as defined above for (A) and X is an activating group of the anomeric carbon, then

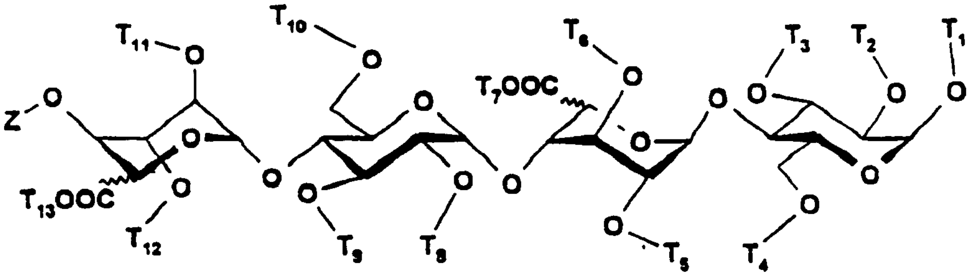
(c) chemically modifying the disaccharide of formula (A) above ~~is modified chemically so as~~ to obtain an intermediate saccharide synthon of glycoside link acceptor disaccharide type of formula (C).



(C)

in which T_1 to T_7 are such as defined above for (A), by selectively eliminating the protective group Z according to classical methods of sugar chemistry, then

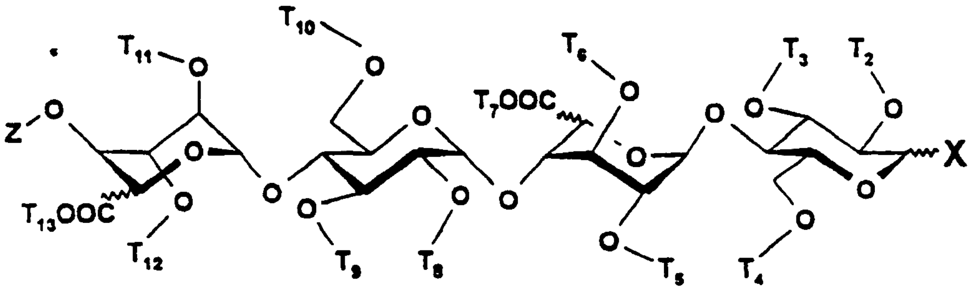
(d) coupling a glycosidic link donor disaccharide of formula (B) obtained above and a glycosidic link acceptor disaccharide of formula (C) obtained above ~~are coupled so as~~ to obtain a completely protected tetrasaccharide of formula (D):



(D)

in which T_1 to T_7 and Z are such as defined above for (A) and T_8, T_9, T_{10}, T_{11}, T_{12} and T_{13} are such as defined for T_2 to T_7 then,

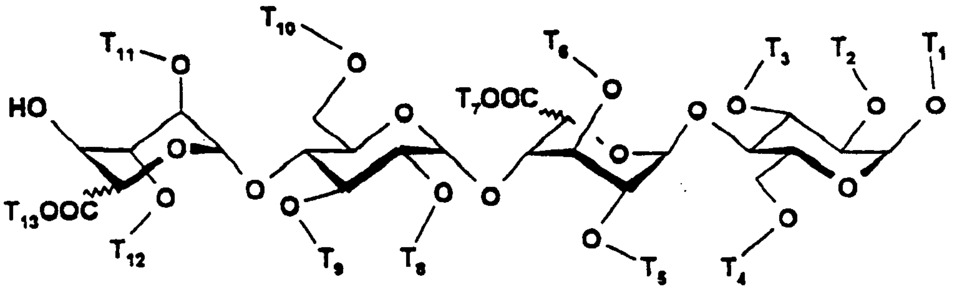
(e) chemically modifying the intermediate saccharide synthon of tetrasaccharide type of formula (D) ~~is then modified chemically so as~~ to obtain an intermediate saccharide synthon of glycosidic link donor tetrasaccharide type of formula (E):



(E)

in which X has the same definition as for (B) and T_2 to T_{13} are such as defined for (D) then,

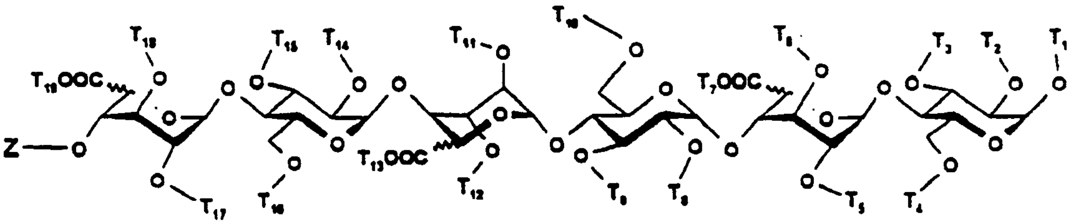
(f) selectively deprotecting the tetrasaccharide of formula (D) ~~is then selectively deprotected so as~~ to obtain a glycosidic link acceptor tetrasaccharide of formula (F):



(F)

in which T_1 to T_{13} are such as defined above for (D) then,

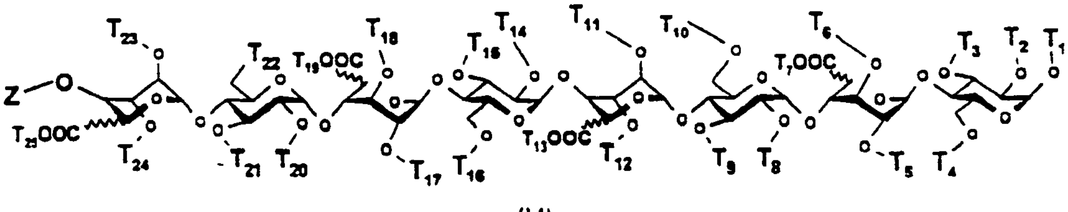
(g) coupling the glycosidic link acceptor tetrasaccharide of formula (F) and a glycosidic link donor disaccharide of formula (B) such as those obtained above ~~are coupled~~ to form an intermediate synthon of completely protected hexasaccharide type of formula (G):



(G)

in which T_1 to T_{13} are such as defined above for (D) and T_{14} to T_{19} are such as defined for T_2 to T_7 for (B);

or ~~else~~ coupling the glycosidic link acceptor tetrasaccharide of formula (F) and a glycosidic link donor tetrasaccharide of formula (E) ~~are coupled so as~~ to obtain a completely protected octasaccharide of formula (H):



(H)

in which T_1 to T_{19} and Z are such as defined previously and T_{20} to T_{25} are such as defined for T_2 to T_7 for (B) then,

(h) chemically modifying the hexasaccharide of formula (G) or the octasaccharide of formula (H) obtained above ~~is modified chemically so as~~ to obtain an intermediate synthon of glycosidic link acceptor hexasaccharide type of formula (G) in which Z is hydrogen or else a glycosidic link acceptor octasaccharide of formula (H) in which Z is hydrogen,

(i) repeating the above deprotection and coupling steps ~~are repeated~~ until the completely protected oligosaccharide having the desired structure is obtained, the glycosyl donor and glycosyl acceptor intermediate saccharide synthons being chosen as a function of the final structure to thus obtain the protected precursor of the desired final polysaccharide of formula (I), in which the nature of the protective substituents determines the position of the alkyl and sulphate groups on the final product (I), and

(j) ~~the deprotection of~~ deprotecting the alcohol functions which must be sulphated ~~is carried out~~ by eliminating the substituents T_1 to T_{25} which protected the functions in the course of the steps of elaboration of the skeleton, then, finally

(k) carrying out the sulphation ~~is carried out~~ to obtain the compounds (I), or one of their salts.

Claim 16. (Currently amended): ~~Pharmaceutical compositions~~ A pharmaceutical composition containing ~~as active principle~~ a polysaccharide or salt thereof according to ~~any one of Claims 1 to~~

~~14~~ Claim 1 ~~in salt form with a pharmaceutically acceptable base or in acid form,~~ in-combination ~~or as a mixture~~ with an inert, non-toxic, pharmaceutically acceptable excipient.

Claim 17. (Currently amended): ~~Pharmaceutical~~ A pharmaceutical composition according to Claim 16, in the form of ~~dose units, in which the active principle is mixed with at least one pharmaceutical excipient~~ a dosage unit.

Claim 18. (Currently amended): ~~Composition~~ A pharmaceutical composition according to Claim 17 in which each ~~dose~~ dosage unit contains from 0.1 to 100 mg of ~~active principle~~ the polysaccharide.

Claim 19. (Currently amended): ~~Composition~~ A pharmaceutical composition according to Claim 18 in which each ~~dose~~ dosage unit contains from 0.5 to 50 mg of ~~active principle~~ the polysaccharide.

Claim 20. (Currently amended): Pharmaceutical A pharmaceutical composition ~~containing a~~ comprising the polysaccharide ~~or salt according to Claims 1 to 14~~ of Claim 1 in combination with another active ingredient selected from the group consisting of an antithrombotic or anticoagulant ~~active principle~~ agent, platelet aggregation inhibitor ~~or~~ and antagonist of the glycoprotein IIb/IIIa complex.

Claim 21. (Currently amended): Pharmaceutical A pharmaceutical composition according to Claim 20 ~~characterized in that~~ wherein the ~~combined active principle~~ other active ingredient is dipyridamole, aspirin, ticlopidine or clopidogrel.

Claims 22-24 (Cancelled)

Claim 25. (New) A method for treating pathologies dependent on a coagulation dysfunction comprising administering the polysaccharide of Claim 1.

Claim 26. (New) A method of inhibiting growth factors shown by an inhibition of cell proliferation comprising administering the polysaccharide of Claim 1.

Claim 27. (New) The polysaccharide according to Claim 11 in which the cation is selected from sodium and potassium.

Claim 28. (New) The polysaccharide according to Claim 12 in which the cation is selected from sodium and potassium.

Claim 29. (New) A method of treating pathologies dependent on a coagulation dysfunction comprising administering to a patient in need of such treatment a polysaccharide according to Claim 14.